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DECEMBER 3, 1949

# SCIENCE NEWS LETTER

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THE WEEKLY SUMMARY OF CURRENT SCIENCE



**Superfortress New Look**

See Page 358

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## PSYCHIATRY

# New Theory of Complexes

► PEOPLE with inferiority complexes also have superiority complexes. The two go together, like the two sides of a coin. The superiority is not put on to make up for feelings of inferiority, as most people believe.

This view, differing from that of earlier psychiatrists, is presented by Dr. Harrington V. Ingham of the Student Health Service, University of California at Los Angeles.

The neurotic benefits from both complexes. If he assumes the superior attitude, he gets praise and does not have to prove himself worthy of it in competition, which he dreads. If he assumes the inferior attitude, he does not have to compete, because everyone knows he will fail and gives him sympathy without his having to compete.

An example of double attitude, given by Dr. Ingham in a report to the California Medical Society in CALIFORNIA MEDICINE (Nov.), is the case of Miss A., "an attractive young woman of 20 who has difficulty in her relationship to the opposite sex."

She complained of feeling repulsive to men and had actually been unable to please them. She made herself unattractive in clothes, voice, choice of words, mannerisms and overeagerness. At the same time she denied that she did this.

Later, it came out that she also felt herself so fascinating that she stayed away from men so as not to hurt them. She had to be careful to avoid being a siren.

Also she was afraid of flirting because it

might fail "and prove her devastating powers non-existent."

"She could still hope her inferiority was unreal if it were not put to the test," Dr. Ingham pointed out. "She could no more tolerate success than failure."

Improvement in her case involved discussion of both her extremes of opinion. When one was discussed, she would bring up the other. But she finally was able to get a more realistic view of herself after which she improved and her behavior changed.

The inferiority-superiority complex occurs, Dr. Ingham stated, in persons who "cannot meet their world face to face, because they have not found sufficient gratification."

A child's opinion of himself is derived from his mother's and father's attitude toward him. The child whose parents show him a lot of affection is not likely to have a double, superior-inferior feeling about himself because he has had gratification and can meet his world face to face.

But a child who is constantly praised by one parent and criticized by the other gets so much contradictory information about himself that he may well be unable to know his true worth. Similarly, a child with foreign parents who finds standards in his home very different from elsewhere may become confused. Confused and uncertain, the child may well develop superiority and inferiority complexes instead of arriving at a real appraisal of himself and his abilities.

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## PSYCHIATRY

# All Posture Has Meaning

► EVERY little posture has a meaning all its own—to the psychoanalyst.

How a patient on the analyst's couch moves and holds his hands, fingers, arms, and legs, whether he crosses his left leg over his right or the reverse, and whether he tucks his thumb inside his fist all may give clues to understanding of his unconscious motivations.

Results of a five-year study of "how the body speaks" were reported by Dr. Felix Deutsch of Boston at the New York Academy of Sciences in New York.

"Every person has a basic posture," he stated.

"Every posture is meaningful and consists of a combination of well-determined postures of single parts. All postures of different parts of the body are attuned to each other and the change of one partial posture leads to a rearrangement of the total configuration."

One patient, Dr. Deutsch said, through

three years of psychoanalysis, assumed a strange hand posture, building with her fingers "the prettiest architectonic edifices," until she became conscious that these fingers represented family members, two sisters, father, mother and brother, whom she led through movements like puppets in a show. Her aggressive, destructive and hostile feelings as well as friendly ones toward them were acted out in continually changing positions of the fingers of both hands.

Another example was a woman with strong masculine tendencies. Unconscious fantasy led her always to place her right hand on top of her left, until the second year of analysis when feminine tendencies broke through and her left hand was then put on top of her right.

A four-year-old, prematurely born, blind boy who could not talk and could stand only with difficulty was another patient. He made rhythmic pounding movements

of his left hand against the wall and against his own head. In spells of crying out loud he suddenly turned in a protective attitude with his right hand toward his right ear while the left hand tried to attack and tear this ear.

"It seemed," Dr. Deutsch said, "as if the right hand had taken over the protective defensive attitude whereas the left hand played the destructive aggressive role. The boy, who had been frustrated in his relationships toward the outer world, and had been deprived of the love of his mother who rejected him, used his hands on his own body for acting out his ambivalent (for and against) feelings in assigning the positive feelings to the right hand and the negative feelings to the left hand."

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## AGRONOMY

# Sagebrush Can Be Licked by 2,4-D

► THERE'S moonlight on the sage tonight. And there is a good chance there will be 2,4-D on it also.

But the sentimental need not despair, for when the weed-killer has done its work and the sagebrush is gone, it will be replaced by love grass, little bluestem, and other grasses.

This came to light when the U. S. Southern Great Plains Field Station put on a demonstration of the effectiveness of 2,4-D in eradicating sagebrush, which for stockmen and ranchers is an expensive weed pest.

Spraying the chemical from airplanes, at a cost of \$2.25 per acre, station scientists found that they killed up to 90% of the sagebrush plants. They then planted a variety of tall native grasses, sand love grass, little bluestem, sand bluestem, switchgrass and Indian grass. Profits from range treated in this way have been double those from sage-infested pasture, figures over a seven-year-period indicate.

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## ASTRONOMY

# Sixth Comet, 1949F, Is Fast-Moving

► THE year's sixth comet, 1949-F, is a fast-moving one. This first important discovery of the sky survey being made at Palomar Observatory was first observed in the constellation of Pegasus, moved speedily into Pisces, and was reported on its way to another constellation.

The comet was discovered by Dr. A. G. Wilson, astronomer in charge of the sky survey. It is a sixteenth magnitude comet, not visible to the naked eye, and is moving away from the sun and east and north.

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## ENTOMOLOGY

# Mosquitoes Resist DDT

DDT has lost its effectiveness against two salt marsh mosquitoes. Malaria-carrying mosquitoes may be the next to develop resistance to the chemical.

► DDT, a chemical which did a valiant job during the war in protecting our forces from disease-carrying pests, is beginning to lose its effectiveness.

Two kinds of salt marsh mosquitoes have now developed resistance to the chemical. Malaria-carrying mosquitoes may be next. The two salt marsh mosquitoes have been serious pests along the Atlantic and Gulf coasts, making many areas impossible for people to live in during the mosquito season. One of them, *Aedes sollicitans*, may spread equine encephalomyelitis, so-called horse sleeping sickness which can also attack man. The other, *Aedes taeniorhynchus*, spreads dengue fever in Florida.

Malaria-carrying mosquitoes have so far not been found resistant to DDT. But entomologists, the scientists who specialize in study of insects, think it is only a matter of time before the malaria mosquitoes will also develop resistance to DDT.

Chemicals which may take over when DDT fails are already being tested by scientists of the U. S. Department of Agriculture. One of them, Lindane, has shown great promise, but is still expensive. It is known to scientists as the gamma isomer of benzene hexachloride. Others have been tried and are also effective. But Agriculture scientists feel that more tests of these new insecticidal chemicals must be made before they can recommend any particular one or ones.

Discovery of the DDT resistant mosquitoes was made in areas along the east coast of Florida by Department of Agriculture scientists working in cooperation with the Department of Defense and the Brevard County Mosquito Control District. First word that DDT resistance was developing, in mosquitoes near Cocoa, Fla., came from the U. S. Air Force. Salt marshes in that area had been treated with DDT in oil at regular and frequent intervals for five years. This had kept the area free from mosquitoes, which was considered one of the miracles of present day insect control practices.

Then, during 1949, great flights of mosquitoes from the treated areas swarmed into nearby towns and villages, in spite of heavy applications of DDT. Help was requested from the Department of Agriculture entomologists stationed at nearby Orlando, Fla. It was at this laboratory that much of the work was done during the war on the development of DDT for control of dangerous insect pests.

Both adults and larvae of both species of salt marsh mosquitoes in the Banana

River area of Florida have now developed resistance to DDT, Dr. W. V. King and associates report from their studies.

Heretofore, the larvae, or wriggler, killing power of DDT had been one of its most remarkable features. But now 10 times the amount previously effective does not kill the resistant larvae.

Only adult house flies have previously developed such resistance to DDT.

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## ANTHROPOLOGY

## Thumb Bone of Ape Man Is New Clue to Problem

► DISCOVERY of a thumb bone of the large Swartkrans ape-man, which gives scientists a new clue for solving the missing link problem, is announced by Drs. R. Broom and J. T. Robinson, of the Transvaal Museum, Pretoria, South Africa.

"One of the most noteworthy differences

between man and the higher anthropoids (apes) is that while man has a good opposable thumb, in the anthropoid the thumb is somewhat degenerate," the scientists point out in their report to the scientific journal, NATURE (Nov. 12).

The "opposable thumb" makes it possible for man to manipulate tools and weapons, though some anthropologists believe that the brain behind the thumb may be what makes us better able to use our hands than chimpanzees and other apes can.

The thumb bone now discovered in South Africa is the metacarpal, which is the first bone starting from the wrist.

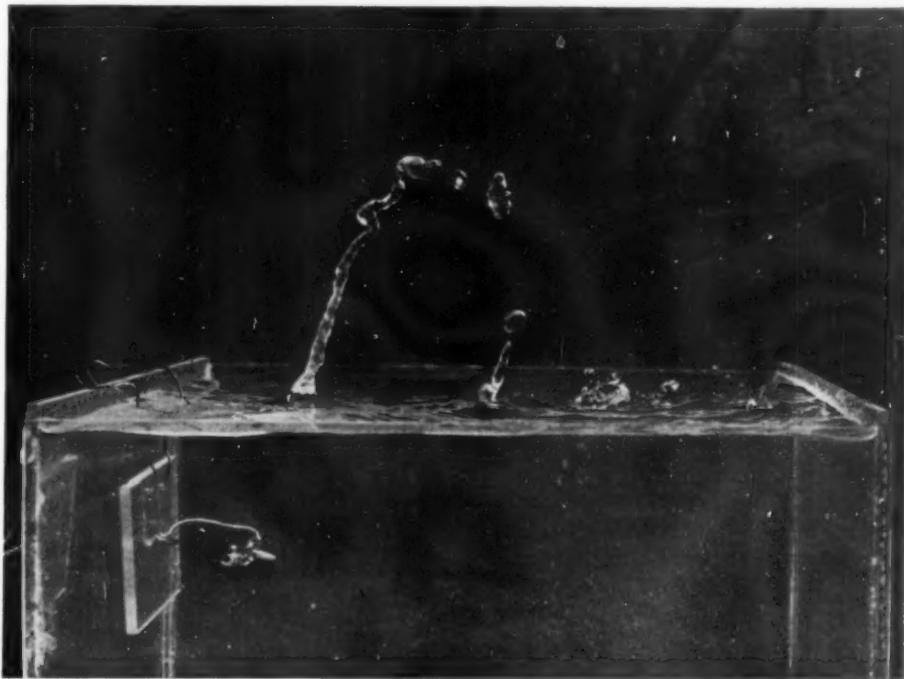
"It is almost exactly like that of man, but smaller," the scientists report.

It is shorter than the Bushman's thumb metacarpal but is somewhat stouter and a little more curved than in man. The fingers of the Swartkrans ape-man probably also were shorter than man's, the scientists suggest, so that the thumb being shorter is not surprising.

The one important difference between this newly-discovered ape-man's thumb bone and man's is a distinct pointed bony process on the inner side at the distal end. The scientists have seen nothing like this in man's thumb bone.

"It seems likely," they conclude, "that the thumb, though a little shorter than in man, was a useful clasping organ, and able to manipulate tools and weapons."

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**ULTRASONIC WAVES**—Sound waves with a frequency of nearly 3,000,000 cycles per second, cause this snake-like jet of water, which breaks up a few inches above the tank, to spurt from the water tank. The ultrasonic waves, sounds pitched so high as to be inaudible, come from a small disc in the water, clamped between two wires. The concave disc vibrates when a voltage is applied across it, and the sound waves are focused upward, causing the geyser.

## VETERINARY MEDICINE

# Virus Threatens Porkers

► A SERIOUS potential threat to the nation's \$2 billion pig industry was revealed in Washington, D. C., with the announcement of a hitherto unrecognized hog-cholera virus which causes outbreaks shortly after injection of the standard anti-serum.

The U. S. Bureau of Animal Industry identified the variant virus when it checked on post-treatment outbreaks which occurred this summer in Iowa, Nebraska and Minnesota.

It is believed that the variant virus was introduced into affected herds as part of the cholera—anti-cholera treatment, when the variant instead of the standard virus was unknowingly injected. A small quantity of the standard virus is injected at the time of serum inoculation to make the immunity permanent.

Until this announcement, only one hog-cholera virus was recognized. Government scientists stress the point that if standard virus is used in the treatment, immunity

is completely effective against both forms of the disease.

Hog-cholera, which is spread by flies and possibly other insects and birds, strikes suddenly, wiping out whole herds in a short time. Ever since it was recognized as a virus disease early in the century, it has been kept under close control, although there was a serious outbreak in 1926, due largely to inadequate supplies of serum.

In a single year losses have run as high as \$65,000,000. Hog-cholera is one of the first diseases to be studied by the Department of Agriculture, having been investigated as early as 1878. The policy has been one of control, not eradication.

In the absence of exact figures, present losses from hog-cholera are estimated to be about 20 to 30 pigs per thousand. The 1948 hog population was 55,038,000, estimated to be worth \$2,355,609,000.

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But they found more destruction, particularly to the central nervous system, than previous work indicated. It was noteworthy that animals exposed to repeated episodes of deficiency showed damage in the brain centers known as the basal ganglia and other tissue which in man are often involved in Parkinson's Disease.

No neuritis was found in the thiamine-deficient monkeys, confirming recent work which indicates that this condition is the result of a multiple deficiency.

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## MEDICINE

# Vitamin B<sub>1</sub> Lack Harmful

► A VITAMIN B<sub>1</sub> deficiency apparently will do more harm to the central nervous system than scientists have thought it would.

This is reported by Dr. James Rinehart, professor of pathology at the University of California Medical School in the the ARCHIVES OF PATHOLOGY (Aug.).

Dr. Rinehart and his associates, Dr. Louis D. Greenberg and Melvin Friedman, are in the midst of a study of the effects of vitamin B deficiencies in the monkey.

Nearly all past studies of vitamin B<sub>1</sub> deficiency have been done on lower animals, particularly rats. So, Dr. Rinehart wanted

to find out just what the deficiency would do to an animal which more closely resembles man physiologically.

Precise studies of such deficiencies in monkeys have become possible only recently, with the development of a reliable synthetic diet for these animals. By withdrawing a single nutritional factor from this diet, scientists can determine the effects of its withdrawal.

Dr. Rinehart and his colleagues confirmed previous findings with lower animals including damage to the central nervous system, the heart and interference with red blood cell manufacture.

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### ENTOMOLOGY

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### GENETICS

On what grounds does Huxley indict Lyenko? p. 364.

### ENGINEERING

What is the function of the BEMAC? p. 357.

Photographs: Cover, Boeing Airplane Company; p. 355, General Electric; p. 357, Boeing Airplane Company; p. 359, U. S. Fish and Wildlife Service; p. 363, American Museum of Natural History; p. 368, Corps of Engineers, Department of Army.

### MEDICINE

What part of the body is harmed by the lack of Vitamin B<sub>1</sub>? p. 356.

What are the latest results of treating colds with anti-cold pills? p. 359.

### PSYCHIATRY

What is the new inferiority-superiority complex theory? p. 354.

Why are postures meaningful? p. 354.

### VETERINARY MEDICINE

What is the threat to porkers? p. 356.

## ENGINEERING

# "Brain" Missile Recorder

The new "brain" will predict and record every movement that a giant missile would make without shooting the missile into the air. Use of it will cut field experiment costs.

► ANOTHER giant computing machine of the electronic type, was revealed by the Boeing Airplane Company, Seattle, Wash. It will study probable flight of a wartime missile. Scientists call such a machine an analogue computer and it is somewhat similar to the digital "electronic brains" of the ENIAC, BINAC or MARK III types.

This new Boeing "brain" will predict and record every movement that a giant missile would make in the air from take-off to landing without even shooting the missile into the air. It will record every waver, dip and spiral the bomb would take if actually fired, and not only is the landing recorded, but also the where and when of the landing.

BEMAC is the name selected for the new device. It does not completely out-mode the traditional gathering of information by actual test flights of missiles, but its use for numerous problems will save many thousands of dollars in time and material required in field experimentation.

It was designed for use in conjunction with Boeing's GAPA ground-to-air pilotless missile project for the U. S. Air Force. The computer was developed by George Stoner, Robert Illman, Bill Galloway, Carl Crumb and Douglas Wilson, all of the Boeing Physical Research unit.

The record of the imaginary flight of a particular missile is made with a rapid-acting motion picture camera which photographs a moving series of dots on the screen or oscilloscope of the computer. The computations are recorded in such a manner that they actually look like a missile flight in the viewer, or in the permanent record of the visual scope made by the camera.

It takes a human "electronic" brain to understand the workings of these mechanical computers, often called "electronic brains," but which are not brains at all. They do no thinking. With the use of many hundreds of electronic tubes and special mechanisms, they follow instructions fed into them in code to find the answers of problems, also fed into them in code, which may be mathematical or physical. The BEMAC is fundamentally non-arithmetic.

A missile is capable of doing only a limited number of basic things in flight, Boeing engineers explain. It can pitch, so an integrator in the electronic portion of the computer is assigned the missile's pitch characteristics through analogous alternating current voltages. These voltages are based on law-of-motion formulas. Each of

the other changes of motion, of which the missile is capable, such as roll, yaw and acceleration, is similarly assigned to different integrators. The sum of all these possible motions represents the missile itself.

At this point BEMAC simulates only the motionless missile, these scientists continue. If a missile were in motion, the original propelling force would set all these inter-

related movements into action. A control surface deflection might cause some yaw and pitch and some change in the angle of flight. The combination of these changes might alter such variables as its velocity and slant range.

In the simulated system, each integrator is connected with each other integrator in much the same manner as the nerve systems in the human body. A change in the yaw integrator thus will be transmitted to the pitch integrator and to all the other integrators for simultaneous reaction. The machine starts to operate with conditions corresponding to those at some known point in a missile flight. Then, as time passes, the analogues will go through the same variations as the corresponding problem variables.

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## MATHEMATICS

# Gambling Luck No Myth

► GAMBLERS' lucky streaks are more than just a superstition among the sporting crowd, the latest work of hard-headed mathematicians discloses.

Studies of the simple gambling game of coin-tossing have shown that even when the coin is perfectly "fair", with equal chances for heads and tails, it is most likely that one of the players will lead in an overwhelming large proportion of the time. The chances that each player will lead

about half the time are much smaller.

Whether or not these new results can be used for a "system" of winning was not announced by mathematicians Kai Lai Chung and W. Feller of Cornell University, Ithaca, N. Y., in their paper in the PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (Oct.). They did give an example of how extreme is the possibility of runs by stating that if a coin is tossed once a second for a total of 365 days, the probability that one of the players will lead for more



**BEMAC COMPUTER**—The entire computing portion of the BEMAC appears above with electronic components at left and mechanical section at right. Both sections are set up in "building block" fashion so that two or more relatively simple problems can be worked simultaneously.

than 364 days and 10 hours is one in 20.

Thus, if you are losing, the chances are against you if you stick it out and wait for your bad luck to change, because it is quite unlikely that you will be ahead half the time in the long run. On the other hand, these mathematicians predict that if you quit when you are even, the chances are only one in 5,000 that you will be faced with such a long run of bad luck.

Help to gamblers is not the goal of the

studies of coin tossing by mathematicians Chung and Feller, however. A better knowledge of probability theory, such as may be learned from simple coin-flipping problems, is expected to lead to better communication and radio equipment and to other engineering advances, and these hopes are the reason for the support of the study at Cornell University by the Office of Naval Research.

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#### PSYCHOLOGY

## Miners Dislike Mining

► MINERS would much rather be farmers, carpenters or machinists than miners. This probably is one of the underlying psychological reasons for repeated strikes in the coal industry, two University of Illinois psychologists report from their intensive study of one typical mining community in Illinois.

Dangers and unhealthy conditions on the job were the reasons given by the men for their deep dissatisfaction with their jobs, when Drs. James Francis Kelly and Thomas W. Harrell interviewed 50 representative miners.

More than half of the men think that miners' wages are high enough, it was found, although 31% feel that the pay is not in line with the difficulties and danger of the occupation. And others qualified their opinions by saying that their pay was not enough for old age; these men feel that the welfare fund is a big help.

The men are not irreconcilably antagonistic to management. Thirty-five out of the 50 interviewed said they believe mine

management is fair.

Nine men out of every ten—45 of the 50 interviewed—said that if they had their lives to live over again they would never be miners. Only four said they would pick mining as a job. Two of the four who would go into it again said they liked the high pay.

The miners are pretty solidly behind John L. Lewis and the United Mine Workers of America. Sixty-four per cent had nothing but praise. Another 24% praised him but qualified their praise with some criticism. With only six men did the blame outweigh the criticism.

Lewis was praised most for his strength and for what he had gained for the men. He was criticized for his personal ambition and dabbling in politics and his ironclad control of the union. Two men said he is too old.

No one criticized the United Mine Workers of America.

Full details of the survey are reported in PERSONNEL PSYCHOLOGY.

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#### CHEMISTRY

## Fire-Retardant Coatings

► PAINT can be made to retard fire instead of causing it to spread, thanks to new chemical and paint research of the past few years. While fire-retardant paint if used on the ill-fated Noronic would not have been the whole answer to preventing the fire, it was the opinion of chemists at the American Chemical Society meeting in Atlantic City, N. J., that it might have helped materially.

Widely used is a Harvard war development, a urea plastic-cellulose mixture, that in effect creates a puffed up coating, like a burned marshmallow, under the effect of heat. The swelling of this glow-proof coating creates air spaces that insulate the wood beneath from the heat that might make it burst into flame faster. Ammonium phosphate, also used to flame-proof fabrics, stops the coating from burning and finely divided carbon takes up flammable gases that are generated by heat in the wood beneath. Called commercially Albi-R, it also contains titanium pigments.

Another fire-retardant coating used by the Navy is a combination of antimony oxide and a chlorinated hydrocarbon, such as paraffin or rubber. This glazes over under heat and the bulkhead of one ship bay would be prevented by it from conducting the heat of a bomb burst to the next section of the ship and setting it afire.

Another fire-retardant coating just now being tested, almost fights fire with fire, since it contains glycerine and nitroglycerine. It, too, forms a retardant coating. Cement paints were developed in England for fireproofing.

There are many successful methods of treating blankets, drapes, clothing and other fabrics to lessen the danger of a match or cigarette setting them aflame, and such flame-proofing properly applied, would prevent many destructive fires and save many lives.

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#### ECONOMICS

## Lower Food Prices Are Predicted for Next Year

► MORE food at lower prices is predicted next year for the world as a whole. But population changes and unequal benefits will offset much of the gains.

This 1950-51 food prospect and the caution not to interpret it too optimistically were laid before delegates to the Food and Agricultural Organization's fifth annual conference by FAO Director-General N. E. Dodd and his staff.

North America, Europe and the U. S. S. R. will show the largest food production gains according to present development plans. Rice supplies in Southeast Asia are expected to be more plentiful than now. India, Poland and Mexico are cited as notable examples of countries which are striving energetically to make food production outstrip population growth.

But things do not look quite so good in the large underdeveloped areas, say the FAO experts in their survey report to the delegates. Lack of money, equipment and knowhow prevent food stocks from increasing in these areas. To keep ahead of the ever-growing population, it would be necessary to raise from two to three and a half percent more food each year. There is no present plan, say the FAO experts, even to approach such an increase.

The United States and Canada in the last 10 years have become more and more important as food suppliers to other countries. Ten years ago they furnished one-seventh of all world food exports. Today their share is two-fifths. Much of this great gain arose from the war emergency when these two countries stepped up farm production enormously to supply their allies.

This has already led to surpluses in the United States. The FAO notes that steps have been taken to restrict wheat acreage in the United States, and are contemplated for corn and cotton, despite the fact that there is still a shortage of these commodities elsewhere in the world.

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## On This Week's Cover

► THE new Boeing B-50D Superfortress is now equipped with two huge 700-gallon streamlined external fuel tanks, as shown on the outside of the wing in the picture, which can also accommodate 4,000 pound bombs (See SNL, Nov. 19). The big bomber has a speed of more than 400 miles an hour and a total bomb capacity of 28,000 pounds. The B-29 and the new B-50 Superfortresses now form the backbone of all U. S. Air Force medium bombardment and strategic reconnaissance squadrons.

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## MEDICINE

# Cold Pill Results

**"Excellent results" have been reported in preventing and treating common colds with the anti-cold pill, Anahist. In these tests Neohetramine caused no unpleasant reactions.**

► LATEST from the cold front: Report of a scientific trial of one of the new anti-cold pills states that this pill gave "excellent results" both in preventing and treating the common cold.

This report gives your doctor his first chance to read the scientific evidence on one brand of the pills which are now being sold at drug stores without a doctor's prescription.

These particular anti-cold pills are sold under the name of Anahist. They are chemically the same as Neohetramine, an anti-histamine chemical used for treatment of hay fever and other allergies. The trials of them that gave "excellent results" are reported in *INDUSTRIAL MEDICINE* (Dec. 1), by Dr. Charles C. Sweet, medical director of Sing Sing Prison, and his consultant on allergy, Dr. Joseph J. Arminio of Ossining, N. Y.

The tests were made at Sing Sing and

at a convent and a seminary. At the convent and seminary the pills were given, in different sized doses, every day from late October, 1948, to the middle of April, 1949. Of 100 persons getting 50 mg three times a day, eight persons came down with colds during the 180-day period of the test. Only one of these was what the physicians call a third phase cold, the kind in which there is a heavy purulent discharge from the nose and which lasts four to seven days.

Among 100 getting the 50 mg dose twice a day, which adds up to four a day of the 25 mg pills on the market, there were 10 colds, three of the third phase type. Of 100 getting 50 mg once a day there were 17 who got colds, 12 the third phase type.

Of 300 who got substitute pills that looked just like the cold pills, 241 got one or more colds, some as many as five

or six during the 180-day period. More than half of these, 179, were third phase type. Complications such as pneumonitis, bronchitis, sinusitis, and the like developed in 11 of these.

None of the persons getting the pills knew which were the drug and which were the dummy pills. Since members of the two groups lived and ate under the same conditions, some sleeping in the same dormitories, their chances of getting colds were considered about equal.

At Sing Sing, the cold pills were given to every third person coming for treatment. The second of each three persons got a dummy pill and the third was given whatever he usually took for a cold, such as aspirin, nose drops, and the like.

Of 40 who got the cold pills during the first 24 hours the cold lasted an average of 1.2 days, about one-fifth the time the cold lasted in those getting the dummy pills. Of 40 who got the pills within the second 24 hours of development of a cold, the time for complete relief was cut in half of the time for those on the dummy pills. Those getting the pills more than 48 hours after the start of the cold and those getting aspirin instead of the cold pills had colds lasting the usual length of time, about five days.

Besides these results of the cold pills in preventing or quickly stopping colds, the two physicians report that the drug, Neohetramine, did not cause dangerous or unpleasant reactions when given in doses of 100 mg daily. None of the persons getting this dosage for 180 days were bothered by sleepiness, dizziness, digestive or other distress.

Science News Letter, December 3, 1949

## AGRICULTURE

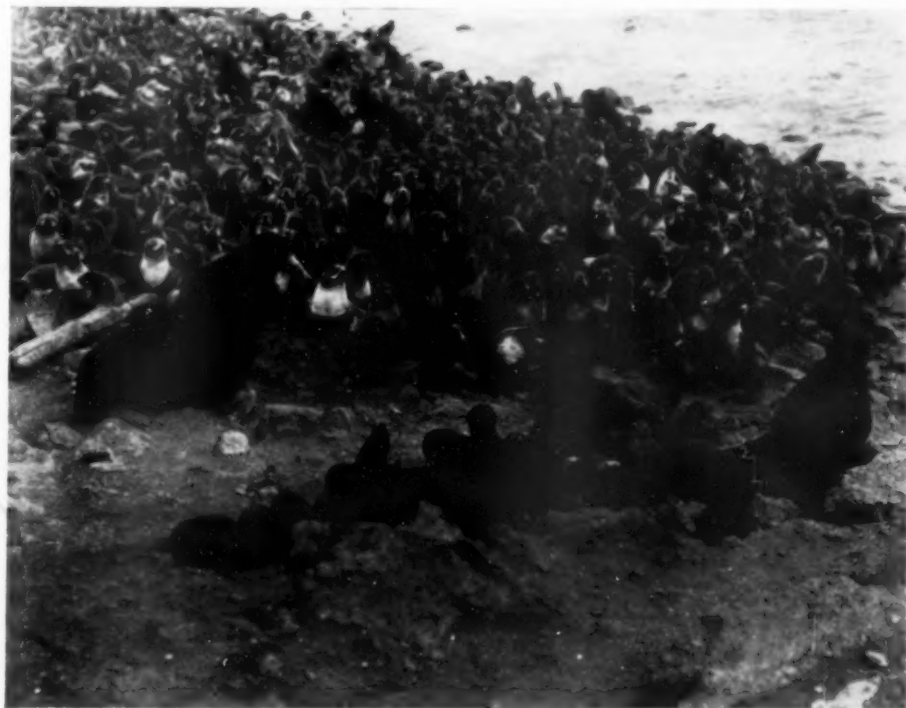
## Rats Plant Seed of Range Land Weed

► UNWANTED seed planted by rats is the latest headache of ranchers in the Southwest.

The planters are Merriam kangaroo rats and the unasked-for crop is mesquite shrub. Mesquite, says the U. S. Department of Agriculture, competes with range grass. Fewer cattle and sheep can be carried on range overrun with mesquite.

Merriam kangaroo rats are a type of desert rat found in the dry regions of the Southwest. They are very fond of mesquite seed, storing them in much the manner of squirrels. They dig a shallow hole in which they bury several seeds. To make germination easier for the hard-shelled seed, the rats gnaw at them just enough to insure sprouting of most of the seeds. This precaution parallels the most progressive agricultural practice, in which machines are used to "scarify" seeds of sweetclover and other hard-shelled seed.

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**FUR COATS "EN MASSE"**—Seals sun on the beaches of the Pribilof Islands completely unaware of the role they will later play in enhancing milady's wardrobe. Eighty percent of all existing fur seals in the world today make their summer homes on the Pribilofs. The close relationship of the natives to the management of the valuable fur seal resources allows the natives to enjoy an economic security on par with the highest income group of any native people in all Alaska, according to a recent survey conducted by the Department of Interior.

## ENTOMOLOGY

**Locusts Used Automatic Stabilizer Before Planes**

► LOCUSTS invented and used an automatic stabilizer that keeps them flying into the wind, and this insect did this long before the airplane was invented.

Dr. T. Weis-Fogh, a Danish scientist, has announced in the British journal, *NATURE* (Nov. 19), the discovery of this aerodynamic sense organ in the kind of insect which caused plagues noted in the Bible. The locust's "yaw-stabilizer" consists of hairs on the front and top of the insect's head.

\* If you shoot a jet of air at a locust, it will turn and fly into the wind.

Experiments by Dr. Weis-Fogh in Prof. August Krogh's laboratory at Oerthefte, Denmark, showed that patches of sensory hairs ranged around the front and sides of the insect's head not only keep it headed into the wind but also stimulates the movement of the wings. As long as the jet of air is directed at the insect, it beats its wings. As soon as the jet stops, wing movement stops. In this way the insect can remain in one place in "stationary flight" for at least an hour.

By means of these hairs the insect changes direction as wind direction changes. When the experimental air jet was turned from in front of the locust to the side, the insect immediately turned head-on into the jet.

The hairs are linked with a sensory nerve whose function was not understood till now. It is not yet known whether the hairs exert any control of the insect's up and down movements also.

*Science News Letter, December 3, 1949*

## MEDICINE

**Buerger Disease Victims Are Aided by Insulin**

► IMPRESSIVE improvement in 20 consecutive cases of the blood vessel and circulatory ailment, Buerger's disease, by treatment with insulin is reported by Dr. Henryk Mazanek of Warsaw, Poland, in the *LANCET* (Nov. 19), English medical journal.

The patients were given 50 to 100 units of insulin twice daily for 20 days. The abnormally low blood sugar that resulted was corrected after three hours with a sweetened drink and a meal of sweet and starchy foods. A 10-day interval without treatment followed each 20-day course of the insulin treatment.

Response to the treatment was slow but usually appeared during or after the first course of treatment. Improvement of collateral circulation, in blood vessels unaffected by the disease but supplying the same body tissues, was marked.

Marked relief of pain, warmer, more normally colored skin, markedly improved

ability to walk and almost normal finger movement occurred. Hand grip was stronger, ulcers healed rapidly and the general condition of the patients improved, Dr. Mazanek reports.

The improvement has been maintained up to the present, 14 months since it started.

Use of this treatment for Buerger's disease is a revival of overlooked work of French doctors 20 years ago.

*Science News Letter, December 3, 1949*

## MEDICINE

**"Chip Off the Old Block" Is True of Baby's Colic**

► WHEN Grandma predicts that the new baby will be colicky just like his dad, or mother as the case may be, she is probably right.

Such predictions can often be made from a careful study of the family past history, Dr. W. Ambrose McGee of Richmond, Va., declared at the meeting of the Southern Medical Association, Cincinnati, Ohio.

Colic is a symptom of allergy, Dr. McGee explained. If one or both parents had colic in early infancy or if they now have clinical allergy, especially the hay fever, asthma or digestive types, the baby "is an excellent candidate" for colic.

An earlier symptom of the allergy than colic is hiccoughing by the baby before it is born. At least half of the babies he attended who had hiccoughs while still in their mothers' wombs had colic later due to sensitivity to cow's milk.

When a baby gets colicky on breast milk, the trouble can usually be relieved by having the mother avoid some specific foods, though it takes careful questioning to discover the trouble-causing foods in the mother's diet.

The big problem is with cow's milk. Boiled, evaporated and powdered milks contain one of the milk proteins, lactalbumin, in denatured form, so that it will not cause allergic trouble. But the casein of the milk may. So other formulas with milk preparations or milk substitutes must be tried. A vegetable milk, called Mull-Soy, was suggested for such cases by Dr. McGee.

"This is the only form of vegetable protein that will sustain life indefinitely aided by vitamin C," he stated.

Sometimes all milk formulas and substitutes must be abandoned and strained meats fed instead. In such cases fats, such as olive oil, and sugar and calcium must be added.

Grandma's remedies for colic, such as hot water bottles, warm water by nursing bottle or by enema and whiskey "are still of value," Dr. McGee said, in attempting to relieve colicky symptoms. He also advised atropin and such modern remedies as the sleeping medicine, phenobarbital, and synthetic opium-like drugs as Demerol.

*Science News Letter, December 3, 1949*

**IN SCIENCE**

## ENGINEERING-MEDICINE

**GI's Can Swiftly Assemble Portable X-Ray Machine**

► PORTABLE X-ray equipment designed especially for rugged field use can now be put up at an instant's notice by soldiers in the field.

This was demonstrated at the National Naval Medical Center, Bethesda, Md. There are two of these light-weight "knock-down" X-ray machines. One is made primarily of sheet steel and the other primarily of sheet aluminum, in case the supply of either metal should become tight during the war.

Both machines incorporate most of the advanced and special features required to make a thorough diagnosis, such as a filter which moves back and forth during exposure to prevent scattered radiation which fogs X-ray films.

The different parts of the unit when packed in a special watertight, rigid corrugated sheet metal container, weighing about 500 pounds, will float.

*Science News Letter, December 3, 1949*

## MEDICINE

**"Dwarf" Bacteria Develop From Common Bacteria**

► "DWARF" bacteria, or germs in layman's terms, develop from some common bacteria after treatment with penicillin, Dr. Robert Tulasne, of the University of Strasbourg, France, School of Medicine, has discovered.

Their place in the disease and epidemic picture may be important, he suggests.

These dwarf bacteria are too small to be seen under the microscope and small enough to pass through fine-pored filters. They may, Dr. Tulasne suggests in a report to the journal, *NATURE* (Nov. 19), have quite different disease-causing powers than the visible forms of bacteria from which they sprang.

Dwarfs from one kind of bacteria, *Proteus vulgaris*, can revert to the normal form when grown on culture medium without penicillin. Others may be able to do the same.

Plague germs and one of the food poisoning family of germs also can develop dwarfs under certain circumstances.

The whole problem of the "filterable" forms of bacteria, especially those of the tuberculosis and syphilis organisms, may need reinvestigation, Dr. Tulasne thinks. Such reinvestigation may, in his opinion, lead to the solution of some outstanding general problems of disease and epidemics.

*Science News Letter, December 3, 1949*



# SCIENCE FIELDS

## FORESTRY

### France's Scorched Forests To Supply Europe's Lumber

► PROPS for Europe's sagging lumber supply will come from an unexpected source this year: France's fire-scorched forests.

The salvaged remnant of some of France's most productive forest areas, ravaged by fire this summer, must be disposed of quickly if it is not to be a total loss. This source will supply enough commercially usable timber to "remove the danger of a serious European timber shortage in 1950," says the International Bank for Reconstruction and Development in an estimate of the European timber situation.

France's permanent loss is Europe's temporary gain. The one-year breathing spell, the Bank points out, has been bought with principal rather than interest. The lost principal, France's forests, will force France to become an even heavier importer of lumber than formerly, and beginning in 1951 Europe will once more face shortages.

The Bank announced this in connection with two loans totaling \$5,000,000 which have just been granted to Finland and Yugoslavia for the development of timber resources. Issued in connection with the Timber Equipment Project developed by the Bank, FAO and the UN Economic Commission for Europe, the loans will be used to buy wood-processing equipment.

It is hoped that by increasing timber production in the timber-exporting countries, which include, besides Finland and Yugoslavia, Austria, Czechoslovakia and Poland, Europe's dependence on lumber imports from abroad will be gradually lessened.

Science News Letter, December 3, 1949

## AGRICULTURE

### Tomatoes Grow in Tubes On Synthetic Food

► RED tomatoes, as tasty as vine-ripened ones, have been grown on synthetic food from a flower detached from the plant.

This is the first time that fleshy fruits have been grown by test tube process though such growth of isolated roots, stems and seed embryos has become classical.

The test tube tomatoes were grown by Dr. J. P. Nitsch of the Kerckhoff Laboratories of Biology at California Institute of Technology, Pasadena, Calif.

The tomatoes "tasted like usual tomatoes," he reports in the journal, *SCIENCE* (Nov. 11). They were seedless and small. Each was about one inch in diameter. But each flower had only about an ounce of food

supply at its disposal. The lack of seeds, Dr. Nitsch says, may have been due to lack of pollination, because the plants were raised in a greenhouse where pollination was very poor, or to killing of the pollen tubes by sterilizing chemicals.

The tomato flowers that yielded the test tube tomatoes were of the San Jose variety. They were cut from the plant, sterilized with calcium hypochlorite, and planted in glass flasks containing various chemicals. No growth occurred in a medium containing only mineral salts, sugar, vitamin B<sub>1</sub> and amino acid, cysteine. The addition of sterile juice from either green or red tomatoes caused the ovaries to develop.

A week after planting in the glass flasks, the ovaries became visible, pushing up the petals and stamens which had kept them hidden. They then enlarged regularly until about the 25th day after full bloom, when growth slowed down.

About the 35th day, fruits turned red and ripened at the same time as tomatoes left on the plant.

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## ENGINEERING

### Canals Leading to Mexico's Island Gardens Lack Water

► THE waterways of famed Xochimilco, tourist attraction and extensive truck garden region of Mexico's capital city, are suffering from a lack of water due to the severe drought this year. The water depth has dropped to only about a foot where a few years ago it was 15 feet deep. In places, traffic along Xochimilco's canal has been halted by the low water.

A drive by Xochimilco's 25,000 inhabitants is under way in cooperation with the federal district's office of hydraulic resources to raise the water level. The island gardens are their livelihood, and if the canals in this Venice-like settlement that dates back to the ancient Aztecs cannot be used, and if there is not water for growing of flowers and vegetables, the business of this Mexico City suburb will suffer greatly.

American tourists who are poled by the natives in flower decked boats along the canals do not often realize that Xochimilco supplies nearly all the flowers and four-fifths of the vegetables consumed in Mexico City.

Two rivers are being diverted so as to flow into the lake which contains the network of islands and canals so familiar as a tourist sight. Obstructions are being removed from the canals to allow the free flow of water, and the government engineers have found many accumulations of weeds, old tree stumps and roots in the waterways.

As a longer time aid to the water supply, hillsides nearby are being reforested with trees. The past summer more than 2,000 students planted 10,000 trees in Xochimilco and other small towns.

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## AGRICULTURE

### They Knew Their Oats And Saved Them, too

► HOW a small misfortune was turned into a blessing that saved a large part of the nation's oats harvest, was told by Dr. Karl Quisenberry of the Department of Agriculture's Plant Industry Station in Beltsville.

Government plant breeders were conducting experiments with a type of oats known as Victoria, Dr. Quisenberry said. Victoria oats and varieties developed from it are widely grown. Suddenly the experimental plot of Victoria oats was struck with a severe blight.

From this attack, the scientists knew that in time a similar blight could be expected to attack stands of Victoria oats throughout the Mississippi Valley. So they set right to work breeding a variety that was resistant to "Victoria blight". This head-start enabled them to supply seed of the resistant type to farmers in time. Thus a potentially serious crop failure was averted by what at first looked like a piece of bad luck.

Specialists in crop diseases, Dr. Quisenberry said, must be constantly on the alert for such danger signals, and they must be ready to take advantage of them. An example which he cited is a stem rust of wheat, known as Race 158. A vigorous search is now in progress to discover strains of wheat resistant to Race 158, before it cuts loose and does large scale damage to the all-important wheat crop.

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## ECONOMICS

### Economists Urged To Think In Terms of Human Values

► ECONOMISTS were urged to consider human values, such as health problems related to money and trade, instead of merely dealing with "abstract curves of choice in theoretical markets."

Dr. John M. Clark, economics professor of Columbia University, New York, told the American Philosophical Society in Philadelphia, that his profession should frankly investigate such questions as: "What should a wise government do about consumers' freedom of choice and why?"

Those lines and curves on the graphs economists draw should become zones or bands with widths that show how much the values being shown can be expected to vary, if Dr. Clark's ideas are followed.

"Economists used to tell politicians what must happen under economic law, despite political efforts to interfere," Dr. Clark said. "Now it seems more nearly true that politicians decide what is to happen, leaving economists speculating as to consequences, and whether or not actual policy is fatally unsound."

Science News Letter, December 3, 1949

## ARCHAEOLOGY

# Stone Age Alaskan Found

An Eskimo legend led to the discovery of Stone Age Man in Alaska. Their stone tools and weapons mark them as the equal of Europe's famed Cro-Magnon man.

By VINCENZO PETRULLO

➤ "THOSE were made by the dwarf."

The Eskimos crowded around the puzzled white man holding several tiny pieces of chipped stone in the palm of his hand.

"What dwarf?" the archaeologist asked the excited Eskimos.

"Only the little dwarf could have made such small tools. He lived a very long time ago. He was very small, only knee-high, but he had great powers. He could make great magic. He could do anything. He was a great chief. Come with us. We will show you where he lived."

## Top Discovery of Year

The archaeologist listened to the legend and let the Eskimo lead him to where the dwarf had lived. As a result there has been unearthed on the shores of Bering Sea evidence of America's earliest ancestors of modern man, Old Stone Age Americans who lived from 10,000 to perhaps 20,000 years ago when the Great Ice Age was almost over.

Corroborating evidence has been found by Dr. Helge Larsen of Copenhagen's Danish Museum who dug at a cave site on Seward Peninsula, about 100 miles farther north.

To archaeologists and anthropologists this is the top discovery of the year.

For the Old Stone Age Alaskans are shown by their unusual stone tools and weapons to be the equivalent of Europe's famous Cro-Magnon men, who painted wonderful drawings in caves and were as handsome as the best-looking people of today.

The American archaeologist who listened to the Eskimo legend and was led by it to make the discovery is Prof. Louis Giddings, a young man, quiet and unassuming, whose frail appearance makes him seem more like the arm-chair professor than an Arctic explorer. He is director of archaeological research at the University of Alaska and leader of an expedition searching for ancient man on Bering's shores.

The Eskimos, excited though they were over finding the small tools, had originally been reluctant to camp at Nukleet, the site where they were found.

"No one has camped here," they told Prof. Giddings, "since the time when an unnatural son killed and ate his own mother here."

Prof. Giddings found no evidence of

cannibalism at Nukleet, but, digging through a number of layers, he did find evidence that the place had been occupied as far back as 2,000 years ago by the Eskimos. In the lowest layer consisting of water worn pebbles, indicating a former beach, he found the microliths, small man-chipped flakes of flint stone which the Eskimos quickly attributed to the legendary dwarf.

Intrigued by the story, Prof. Giddings followed his guides to the other side of the peninsula to a spot on Norton Bay opposite Seward Peninsula called Iyatayet by the Eskimos. It was at this site that he discovered the buried relics of paleolithic (Old Stone Age) man.

## No Bones at Iyatayet

Iyatayet is a stretch of swampland connecting the ten-mile-long, one-mile-wide basaltic ridge known as Cape Denbigh to the mainland. A fresh water stream flows through it, insuring drinking water the year around. There is no sure source of fresh water at any other place on the Cape. It is probably for this reason that the site

was a favorite camping place for the primitive hunters who lived in that part of Alaska. The area shows signs of human occupation as much as a quarter of a mile from the present shoreline.

But the water which attracted these ancient people to the site also has prevented preservation of their bones for modern scientists to find. No human or animal bones have been discovered.

In that portion of the site excavated by Prof. Giddings, he found the top layer consisted of the floor logs of an Eskimo pit dwelling built about 300 years ago. Beneath these logs he found a clay bed containing relics of the Ipiutak Eskimo culture. These Eskimos hunted whales, bartered iron tools from Siberia and decorated ivory with animal figures. Many features of the Ipiutak culture show a connection with the new stone age in northern China and Siberia. The Ipiutak Eskimos appeared in Alaska about 2,000 years ago.

Up to this point the site showed nothing unusual. The culture sequence was the same as that at Nukleet on the opposite side of the peninsula.

Continuing to dig deeper, Prof. Giddings came upon a series of layers of sterile clay from six to 18 inches thick.



**IYATAYET EXCAVATION SITE**—Beneath this site were found relics of the oldest American ancestors of modern man. The burins, a particular type of microlith, found here are identical with those made by Cro-Magnon man.



**CRO-MAGNON MAN**—The newly discovered Stone Age Alaskans are the equivalent of Europe's Cro-Magnon Man, above, who was artistic and very much like the modern European in appearance.

No sign of human relics was found in this clay, showing that the site was uninhabited for a considerable period of time.

#### Flint Implements Found

It was beneath these layers of clay that Prof. Giddings discovered a large quantity of extraordinary obsidian and flint implements. So many miniature chipped flints were found and of such exquisite workmanship that the Eskimo guides immediately revised their legend of the dwarf. Unquestionably the dwarf had made many of the flints but, said the Eskimos, "there must have been a lot of little people—a whole race of them."

The flints lie in a bed of pebbles, indicating that this layer was formerly a beach. Since the layer is about 40 feet above sea level the land must have risen considerably through the ages. Geologists are busy studying the site to determine how long ago the beach was at sea level and how long ago the sterile layer of clay on top of it was deposited. It may have been washed in by the stream in time of flood and deposited as the waters went down, but this must have occurred many times to account for the lamination.

The implements found were made by striking off long flakes from the flint and obsidian cores. Some of these flakes were then chipped carefully. Distinguishing features of the chipping are the serrated or saw-tooth edges so finely done that the teeth along the edges are scarcely visible to the naked eye and fine diagonal flaking across the flat sides. Chipped microliths are found in Old Stone Age layers in Europe but the serrated edges of the Iya-

tayet specimens make them unique. No similar implements are known from anywhere else in the world.

#### Link with Cro-Magnon

Associated with these extraordinary microliths are the so-called burins which definitely link the site with European Cro-Magnon. Burins are microliths which have as an added feature a sliver knocked off one of the edges. The Iyatayet burins are identical with those made by Cro-Magnon Man.

The diagonal flaking on the microliths is found also in the Yuma points discovered in the Finney site in Wyoming but the Yuma points are much larger and cruder than the Iyatayet. Both Yuma and Folsom type implements are found associated with the Iyatayet microliths. Yuma and Folsom points may be as old as 25,000 years. The makers of the Iyatayet microliths were evidently familiar with the bigger Yuma and Folsom implements as well as with the burins found in the Aurignacian culture in Europe produced by Cro-Magnon Man. Thus Iyatayet may be the missing link between the ancient cultures of Texas and Wyoming and the Old Stone Age culture of Europe.

Europe's Cro-Magnon Man was tall and straight, very much like the modern European. He may have been white. He lived at the edge of the glaciers in western Europe, especially in France and Spain. Although he made fine flint implements, he is most famous for his art. On the walls of deep caves in southern France and Spain he painted beautiful pictures in an extraordinary realistic style of the animals he hunted. This beautiful cave art still is in a wonderful state of preservation. It was never equalled by the people who occupied this region of Europe after Cro-Magnon Man. What happened to this talented race remains a mystery. Did it move northward with the retreating glaciers and finally find its doom in the Arctic regions?

#### Questions Await Answer

The actual dating of the Iyatayet material will depend on the findings of the geologists. The key to the site is the layer of laminated clay. So far several things are certain. The microliths are older than anything found in Alaska before. They antedate the Ipiutak Eskimo culture of 2,000 years ago. The burins resemble those found in Aurignacian layers 15,000 to 30,000 years old. They may have been made that long ago either by a Cro-Magnon people or by another people who were familiar with the implements of these Old Stone Age people and the art of making them.

How old are these flints? Who made them? Is there any truth to the Eskimo legend of a dwarf or pigmy people? Will Cro-Magnon Man be found in the New World? These are some of the questions that Prof. Giddings will try to solve next

summer when he resumes excavating. Special effort will be made to locate dry caves, such as that explored by Dr. Larsen, in the hope of finding actual human bones in association with the flint implements.

More discoveries like those made at Iyatayet may solve the mystery. The University of Alaska, the University of Pennsylvania Museum and the Copenhagen Danish Museum, under whose auspices the discoveries were made, are planning to intensify their cooperative efforts to determine who were the earliest human inhabitants of the American continent.

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#### MINING

### Tracer Bullet and Flint Metals Are Found in U.S.

► TRACER bullets for machine gun practice and the flints in cigarette lighters may soon be made from rare earth elements uncovered in southeastern California instead of from imported ores. These same rare earth elements are artificially produced by atomic piles in very high purity, but in limited amounts, and are used by scientists to study alloys for use at extremely high temperatures.

Discovery of at least five veins, three of which contain considerable amounts of fluorocarbonate of cerium and lanthanum combined with thorium and uranium, was announced by the U. S. Geological Survey. This discovery makes the United States more independent of foreign sources, mainly Brazil and India.

Clarence Watkins and Herbert S. Woodward of Goodsprings, Nev., two of the owners of the property, discovered the deposit when the minerals were found to be radioactive by test with a Geiger counter.

Interest in the rare earth elements has been greatly stimulated by the fact that they are in the group of fission products produced by the splitting of uranium. Also elements, known as trans-uranium elements, that are not found in nature but are built by the addition of atomic particles to uranium, have the same structure as the rare earths and are of great theoretical interest to chemists and physicists.

Science News Letter, December 3, 1949

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## ECONOMICS

# Europe Recovery Thwarted

► "POLITICAL boundaries are thwarting the economic rehabilitation of Europe and hampering the economic growth of many other regions of the world," Dr. Howard A. Meyerhoff, geographer and geologist, and administrative secretary of the American Association for the Advancement of Science, told Science Service.

Dr. Meyerhoff, who was a professor at Smith College for 25 years, said he thought that very few Marshall Plan officials realize the necessity for permitting the development of a natural industrial region in Europe centering around the iron ore of the German Ruhr and the coal resources of French Lorraine.

However, Dr. Meyerhoff said, the political and economic integration of Europe for which ECA Administrator Paul Hoffman is working would be of some help in the development of this Ruhr-Lorraine natural region.

Dr. Meyerhoff develops this idea of natural industrial regions in *THE AMERICAN SCHOLAR* (Winter Issue), published by Phi Beta Kappa. Mere possession of basic raw materials such as iron ore and coal, Dr. Meyerhoff writes, is not enough to make a nation rich. High living standards, he says, depend on the free flow of raw materials,

machines and some consumer goods.

"Basically," declares Dr. Meyerhoff, "there is no such thing as a well-rounded national economy, even among those nations that nature has favored."

Instead, he asserts, the industrial world is organized into several clearly defined industrial nuclei that dominate trading areas of varying sizes and importance. These nuclei are localized around centers of maximum energy production, such as the coal fields of the Appalachian-eastern interior of this country and the midlands of Britain. When political boundaries get in the way of the free flow of goods to and from these areas, he declares, the standard of living is lowered.

Dr. Meyerhoff told Science Service that a good example of an industrial nucleus which has been choked off by political boundaries before it had a chance to get started can be found in Newfoundland and New Brunswick, Canada. Newfoundland has the world's sixth largest reserve of iron ore, and New Brunswick has good coal resources. Those resources could serve a region extending down through New England to the Hudson river, he declares, were it not for the tariffs to be found at the Canadian-American border.

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## GENETICS

# Huxley Indicts Lysenko

► JULIAN Huxley, British scientist and former Director-General of UNESCO, accuses Trofim Lysenko, President of the Lenin Academy of Agricultural Sciences, of destroying scientific method and of dividing the world of science into warring camps based on political differences.

His new book, just published, *HEREDITY EAST AND WEST* (Schuman), is a carefully documented indictment of Lysenko's genetics and his use of it to destroy the impartiality of science as it is known in the West.

"I at first imagined," writes Dr. Huxley, "that there might be something in Lysenko's claims. However, the more I heard and read, the clearer it became that Lysenko and his followers are not scientific in any proper sense of the word—they do not adhere to recognized scientific method, or employ normal scientific precautions, or publish their results in a way which renders their scientific evaluation possible."

Although Dr. Huxley shows point by point that Lysenko's theories are invalid, unprovable, or downright false, he states that, "it speedily became clear that the major issue at stake was not the truth or falsity of Lysenko's claims, but the over-

riding of science by ideological and political authority."

Despite a Russian attack on himself as "the specious director of UNESCO," Dr. Huxley takes pains to point out that he is "not concerned to be either anti-Soviet or pro-Soviet." He adds, "I consider that the methods used by certain groups and certain sections of the press in the U. S. A. to denigrate (defame) the U. S. S. R. and to foment hatred of communism are equally bad and equally regrettable."

"If I criticize or condemn some of the methods used, that is not because I am hostile to the U. S. S. R.," writes Dr. Huxley, "but because I believe that they are bad—bad in themselves, bad in their effects on human progress and achievement, and in the long run for the U. S. S. R."

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## ENGINEERING

# Fluorescent Light Gives Natural Look to Colors

► THINGS look more like they ought to under a new fluorescent lamp announced by the lamp division of General Electric, in Cleveland. Due to a new phosphor in

them, the lamps bring out the "full beauty" of all colors, and are complimentary to people's complexion.

The new phosphor, a coating to use inside the lamp's tube to convert invisible light waves to visible light, is a "double-activated calcium phosphate," G. E. scientists state. It is designated the DR phosphor. It will be used in two new lamps, a "de luxe cool white" and a "de luxe warm white" lamp, the latter particularly desirable in social environments such as beauty shops, restaurants and homes.

Science News Letter, December 3, 1949

## Words in Science—

## ALLIGATOR-CROCODILE

► MANY people are interested in the difference between two closely related reptiles, the alligator and crocodile.

You can tell the American alligator from the American crocodile principally by the nose. The alligator has a broad head bluntly rounded at the nose; the crocodile nose narrows to a point having a notched, cut-in outline.

There is a difference, too, in the teeth, although you may not care to investigate this too carefully. What corresponds to the canine teeth on the lower jaw of the alligator are hidden when the jaw is closed, fitting into a pit in the bone of the upper jaw. Corresponding teeth of the crocodile fit into a notch on the outside of the upper jaw.

There is, however, a great difference in disposition. The alligator is sluggish, and even when enraged is inclined to stand in one position, thrashing his tail. The crocodile is active, vicious, and will pursue and attack.

Science News Letter, December 3, 1949

## VETERINARY MEDICINE

## Wild Bulls Are Pacified By New Drug Injection

► A NEW drug, berbeerine, which calms down excited animals long enough for the veterinarian to operate on them, was reported in the journal of the American Veterinary Medical Association.

Kicking, lunging, rearing animals are quickly pacified by an injection of berbeerine, the full name of which is dimethylberbeerine hydrochloride. Veterinarians in Argentina who have used the drug in surgical operations, have found that its action greatly reduces danger to both doctor and beast.

The drug acts as both a pacifier and pain-killer. Its effect lasts for about 20 to 30 minutes.

Science News Letter, December 3, 1949

# How to extend Christmas THE WHOLE YEAR THROUGH

**FOR THE MOST UNUSUAL PERSON  
ON YOUR CHRISTMAS  
LIST**

Wouldn't he (or she) like a gift of twelve packages, one to arrive each month in 1950?

Twelve  
Surprises  
plus  
another  
we'll add



IN EACH 1950 gift package, there will be several objects of science, and with each object, a museum-style legend card, which will tell at a glance what these THINGS of science are. Included will be the sheets of explanation, that give the interesting details of discovery, of development, of manufacture, and that tell how to perform unusual experiments with the contents of the package.

Since late in 1940, packages like these have been going forward to members of the THINGS of science group. Glance over this list, then decide whether a membership which brings monthly packages on subjects as widely varied as these, isn't just the thing for that most unusual person on your Christmas Gift list.

- |                 |                      |                      |
|-----------------|----------------------|----------------------|
| Fingerprinting  | Rubber Plants        | Chicle               |
| Meteorites      | Spices               | Corn Byproducts      |
| Fossils         | Sweetness            | Lecithin             |
| Vitamins        | Volcanic             | Vegetable Dyes       |
| Insects         | Steel                | Housing Materials    |
| Mineral Optics  | Coal Byproducts      | Tree Products        |
| Plant Hormone   | Coffee               | Phosphorescence      |
| Unusual Fabrics | Nylon                | Dry Cell             |
| Plywood         | Sound Recording      | New Flower Seeds     |
| Oyster          | Home & Office        | Electronics          |
| Lodestone       | Tricky Minerals      | Coffee Byproducts    |
| Rayon           | Glass Lens           | Cellulose Plastics   |
| Coins           | Rope                 | Specialized Textiles |
| Felt            | Plastic-Coated Yarns | Fungicides           |
| Casein          | Insecticides         | Impregnated Paper    |

You know the one who would thank you again and again for such a gift. And if you are not yourself a member, you could hint to someone that you'd like it as a gift yourself.

The 1950 THINGS of science will be unusual; every month's package will be a surprise. A Christmas Membership to THINGS of science will bring the 12 units of 1950, plus an extra unit which we will select and add to your gift with our compliments, to arrive in time for Christmas. We will make out and mail a Christmas card with your name as donor, announcing your gift. Each membership is \$4 a year, postpaid. You will find a handy order coupon below.

T-432

## Gift from

MY NAME.....

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Mail this order to THINGS of science, 1719 N St., N. W., Washington 6, D. C. for the 12 units of 1950 plus the extra Christmas unit.

- I enclose \$4.00 for the following  
 Please bill me after Christmas

## Gift to

PLEASE PRINT.....

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CITY & STATE.....

MAKE OUT Christmas Card  
TO READ from.....

WILDLIFE

# NATURE RAMBLINGS



Squirrels

► A LADY with a marked distaste for rodents was strolling in the park one day. A squirrel, emboldened by intimations of hunger brought on by portents of impending winter, ran up to her with a mute plea for a handout.

Steeling herself to look the little beggar in the eye, the lady exclaimed, "Go away. You don't fool me for one minute with your big bushy tail, you little rat." The squirrel didn't tarry to hear more. With the days getting shorter and a winter's store of nuts to get in, he hastened off to fill his quota in more sympathetic quarters.

This is a true story. Both the lady and the squirrel can attest to it. And although the lady is no zoologist, she very deftly, with the intuition for which her sex is famed, touched the very heart of the matter. For the kinship between squirrels and rats is very close indeed.

Squirrels and rats, together with mice, woodchucks, gophers, chipmunks, beavers and muskrats, to name only some members of the order, are members of the rodentia. The rodents, highly prolific in a family way, are also extremely prodigal in the variety of species and genera that comprise the clan.

But of them all, the squirrel is perhaps

unique for his purely decorative value. On the hoof that is. No self-respecting park would be without its quota of squirrels. In fact, few other animals make their home there. The only other animals seen in parks with any frequency are the familiar biped, with or without his dog, and of course pigeons, sparrows and starlings, among the commoner birds.

At this season of the year, the squirrel is at his busiest. He scurries hither and yon, looking for nuts and cones to lay by for the grim days ahead. In urban areas, as noted above, he sheds any timidity he may still retain, accosting total strangers. At his tamest, he is astonishingly audacious. Park bench philosophers have been known to reach absent-mindedly into their coat pockets only to find an optimistic squirrel ferreting there for stray goobers.

The red squirrel, sketched here, is a denizen of the northern part of the country. No one who has walked through the fall woods can have failed to notice him. He is a notorious chatterbox, filling whatever quarter of the woods his business takes him to with his grievance of the moment.

He scolds his wife, harangues his enemies, and heaps fluent abuse on any mere human who happens to stray within the very considerable range of his voice.

But despite the endless charm he finds in filibustering, he does a very methodical job of marketing for the winter larder. He

is a superior judge of nuts and seeds, and despite the impression he gives that half his attention is directed elsewhere, very rarely can a bad nut or spoiled seed be found hidden in his winter cache. He has mastered the knack of doing two things at once.

Science News Letter, December 3, 1949

During the past war, a total of 12,000,000 tons of refuse was collected in the United Kingdom and converted into \$140,000,000 worth of agricultural and industrial materials, including airplane parts made from waste paper.

To be Published Spring, 1950

## Gray's Manual of Botany

EIGHTH EDITION

Revised by

MERRITT LYNDON FERNALD

Fisher Professor of

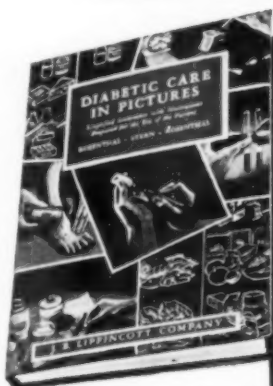
Natural History (Botany)

Emeritus, Harvard University

Rewritten almost entirely by the outstanding authority on the flora of Northeastern America, this widely used manual is now being reset in a handsome new format. Here are a few of the important features of the Eighth Edition:

- Approximately 3000 more species and varieties of vascular plants are included than in the seventh edition.
- At the beginning of the book there is a *Synopsis of the Orders and Families of Vascular Plants*.
- The geographic range covered in the new manual is the same as in the Seventh Edition except that it has been extended eastward to include the Gaspé Peninsula, Anticosti, and Newfoundland.
- The analytical keys to genera and species have been amplified.
- More than 1800 line drawings are included.
- All technical names are explained in such a way that students may see wherein they are appropriate.
- The descriptions of the species are fuller than formerly.

## to smooth the way for DIABETICS



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# Books of the Week

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**THE ART OF READABLE WRITING**—Rudolf Flesch—*Harper*, 237 p., \$3.00. An aid in writing simply. This book contains the author's new formula for measuring the readability of written material.

**ATOMIC ENERGY COMMISSION OFFICIAL RECORDS**, 4th Year, Special Supplement No. 1—Atomic Energy Commission—*United Nations*, 75 p., paper, 80 cents. Background on the pressing problems of atomic energy control, these records include general findings and recommendations approved. The text is in both French and English.

**BETTER CARE IN MENTAL HOSPITALS:** Proceedings of the First Mental Hospital Institute—Daniel Blain, Ed. *American Psychiatric Association*, 208 p., paper, \$3.00. The complete record of the meeting held at the Institute of the Pennsylvania Hospital in Philadelphia, April 11-15, 1949.

**THE DESIGN OF DEMOCRACY**—Laurence Stapleton—*Oxford*, 301 p., \$4.00. The author, a Guggenheim fellow, discusses the ideas and ideals on which democracy is based, and suggests how world affairs can be conducted in a more democratic manner.

**ELEMENTS OF GEOGRAPHY: Physical and Cultural**—Vernor C. Finch and Glenn T. Trevartha—*McGraw-Hill*, 3rd ed., 711 p., illus., \$6.00. A textbook for beginning courses in college geography.

**THE FORESTRY DIRECTORY**—Tom Gill and Ellen C. Dowling, Compilers—*American Tree Association*, 420 p., \$3.00. An authoritative guide to forestry activities in the United States and Canada.

**FREQUENCY MODULATED RADAR**—David G. C. Luck—*McGraw-Hill*, 466 p., illus., \$4.00. A reference work covering the principles and possibilities of f-m radar.

**HEALTH INSTRUCTION YEARBOOK 1949**—Oliver E. Byrd—*Stanford University Press*, 7th ed., 276 p., \$3.50. Health developments for the year 1948.

**HYPNOTHERAPY OF WAR NEUROSES: A Clinical Psychologist's Casebook**—John G. Watkins—*Ronald*, 384 p., \$5.00. A report of psycho-

therapy practiced by the author in the neuropsychiatric division of an Army convalescent hospital during the past war.

**ISOTOPES: A Three-Year Summary of U. S. Distribution**—United States Atomic Energy Commission—*Gov't Printing Office*, 201 p., illus., 45 cents. Provides a useful measure of the value of isotopes to peacetime research. Lists 1850 publications that have been issued on work done with these products of the atomic energy program.

**LABORATORY EXPERIMENTS IN COLLEGE PHYSICS**—Cicero Henry Bernard—*Ginn*, 291 p., illus., paper, \$2.75. A manual usable with any standard first-year physics book.

**MAN AND HIS PHYSICAL UNIVERSE**—Frank Covert Jean, Ezra Clarence Harrah and Fred Louis Herman—*Ginn*, rev. ed., 642 p., illus., \$4.00. A textbook for an introductory science-survey course.

**MORE PAINTING PATTERNS FOR HOME DECORATORS: Book Two**—Ruth Wyeth Spears—*Barrows*, 64 p., illus., \$2.00. Fascinating decorations for the hobbyist including designs for wood, tin, glass, pottery, stenciling on fabric and greeting cards.

**MOTOR PERFORMANCE AND GROWTH: A Developmental Study of Static Dynamometric Strength**—Harold E. Jones—*University of California Press*, 181 p., illus., paper, \$2.00 (Cloth: \$3.00). Report of an adolescent growth study.

**ORGANIZATION OF BEHAVIOR: A Neuropsychological Theory**—D. O. Hebb—*Wiley*, 335 p., \$4.00. The author presents his theory on what goes on in the human brain between a stimulus and the response. Written for the clinician and physiologist as well as the psychologist.

**PACHYPHYLLUM VAGABUNDUM, A NEW CORAL FROM THE UPPER DEVONIAN STRATA OF NEW YORK**—George M. Ehlers—*University of Michigan Press*, 4 p., illus., paper, 30 cents. Well illustrated with photographs.

**PICTORIAL FOLK ART: New England to California**—Alice Ford—*Studio Publications*, 172 p., illus., \$6.95. Presents some of the historical facts and background for the various groups of primitive and early painters in

different sections of the country and describes the rise of modern popular painting. Illustrations are representative.

**SCIENCE AND CIVILIZATION**—Robert C. Stauffer, Ed.—*University of Wisconsin Press*, 212 p., \$2.50. Eight prominent scholars discuss the social implications of science. One of the symposia held in celebration of the University of Wisconsin's centennial year.

**SHUSHIN: THE ETHICS OF A DEFEATED NATION**—Robert King Hall—*Bureau of Publications, Teachers College, Columbia University*, 244 p., \$3.75. Presents in historical perspective an analysis of the ethics teaching in Japanese schools immediately before the Second World War.

**THE TVA IDEA**—Dean Russell—*Foundation for Economic Education*, 108 p., paper, 75 cents. The author sees in projects such as TVA a threat to American freedom.

**TECHNIQUES OF COLLECTING MICROVERTEBRATE FOSSILS**—Claude W. Hibbard—*University of Michigan Press*, 19 p., illus., paper, 50 cents. A description of collecting methods and their application on a large scale to the study of Cenozoic stratigraphy and fossils.

**THEORY AND PRACTICE OF SOCIAL CASE WORK**—Gordon Hamilton—*Columbia University Press*, Ninth printing, 388 p., \$3.50. Analyzes current theory and practice.

**U. S. INDUSTRIAL DESIGN '49 '50**—Society of Industrial Designers—*Studio Publications*, 176 p., illus., \$10.00. Presents work by leading members of the profession.

**WINTER BOUQUETS WITH COLOR: The Art of Arranging Dried Flowers**—Ruth Gannon—*Studio Publications*, 72 p., illus., \$2.85. The author writes on the correct method of picking, drying and arranging your winter flowers and also how to pick your colors.

**A WORD GEOGRAPHY OF THE EASTERN UNITED STATES**—Hans Kurath—*University of Michigan Press*, 88 p., with 163 figures, illus., \$4.00. The results of an investigation concerned with the regional and local vocabularies of the original 13 states and all territories settled before 1800 except Kentucky. Reference for students of Americana and regional sociologists.

**YATES' GUIDE TO SUCCESSFUL INVENTING**—Raymond F. Yates—*Funk*, 224 p., illus., \$2.95. A wealth of practical information including patent helps and how to market your inventions.

Science News Letter, December 3, 1949

## Safety in the Laboratory



A new filmstrip comprising 53 hand-drawn cartoons, each driving home a powerful lesson in laboratory safety. Postpaid \$3.00.

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## WHAT SHALL I GET AUNT EMMA

for Christmas? She's hard to please, has just about everything. . . (May we suggest two gifts?) 1. LEK-TRO-LENS light magnifier clips on 25 to 100 watt bulbs in lamps, light fixtures, focuses twice the light, helps old and tired eyes (bright young ones too!). Swings to any position. Postpaid, 3 for \$1.00 plus 6c stamps. 2.



DAY-BRITE magnifier is like LEK-TRO-LENS but has filter, gives WHITE light similar to daylight. Postpaid, 79c ea.

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Bridgeport, Conn.

# • New Machines and Gadgets •

For addresses where you can get more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N. St., Washington 6, D. C. and ask for Gadget Bulletin 494. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

❁ **ADJUSTABLE SHOE HEEL**, recently patented, is constructed in two parts, the rear portion being round in shape and held to the top lift of the heel with screws. When this disk becomes worn on the "walking edge" it can be rotated to a new position by loosening the screws, or it can be replaced.

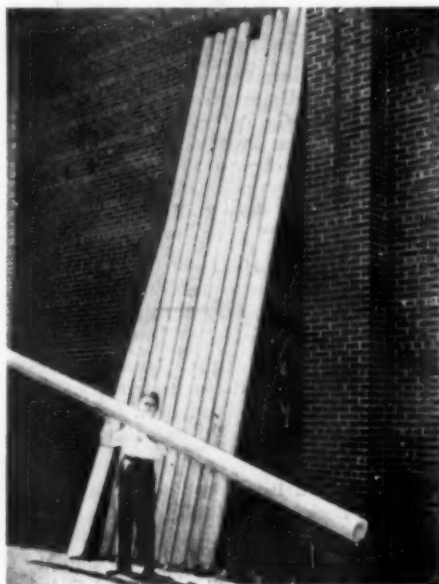
Science News Letter, December 3, 1949

❁ **ROLLING MAST** on dry land, in use by the U. S. Navy, will perform all the gyrations of a mast on a ship in a storm. Any combination of roll, pitch and yaw can be obtained with this 75-foot mast by electrical machinery. The mast is for use in testing instruments under severe conditions.

Science News Letter, December 3, 1949

❁ **MAGNETIC STIRRER**, for laboratory use, operates on either steam or compressed air to effect stirring action at steambath or room temperatures. Since there are no electrical components, it is completely safe to use with inflammable, volatile substances and in hazardous locations.

Science News Letter, December 3, 1949



❁ **GLASS PIPE**, shown in the picture, is actually glass fiber impregnated with resin, and has as its chief value its lightness. The weight is about one-fourth that of comparable steel pipe. It was developed for

use by the U. S. Armed Services in cross-country fuel lines.

Science News Letter, December 3, 1949

❁ **CIGARETTE LIGHTER FUEL**, an English preparation which comes in a two-inch gelatin container and is now available in America, can also be used to remove stains and grease, clean glasses and remove lipstick from collars. The container is unbreakable but easily opened with a pin.

Science News Letter, December 3, 1949

❁ **CARRYING CASE** for ladies' hosiery, cosmetics and handkerchiefs is a handleless handbag-like affair with four snag-free pockets, each about six inches square. Made of a quilted, satin-textured vinyl plastic, easily washable, it comes in four color combinations.

Science News Letter, December 3, 1949

❁ **LUGGAGE CARRIER** has folding frame with caster wheels and is designed for easy cartage of suitcases, trunks and packing cases weighing up to 300 pounds. Rubber-covered gripping posts leave luggage unmarred, and its rubber-covered swivel wheels protect fine floors. The device weighs less than two pounds.

Science News Letter, December 3, 1949

## • Do You Know? •

The *chrome* on the family car can be cleaned with a good household scouring powder.

Norwegian educators are bringing *instruction in English* by radio to even the most remote rural schools.

The *prime meridian*, Greenwich, London, now generally recognized throughout the world, was adopted by international agreement just 65 years ago.

The true *Iceberg lettuce* is a variety with red-tinged leaves that has no commercial value; what is purchased as Iceberg is the New York and Imperial strains.

A new type of *bus* already on American highways has a 17-passenger compartment in the front half and an equally large compartment to the rear to carry freight.

*Muskrats*, quarantined from Norway for years, may soon become highly-favored animals in northern sections where it is now suggested they be raised, principally for their fur.

At any given moment, some 1,800 *thunderstorms* are probably occurring throughout the world.

About one-third of *coal* is volatile matter easily driven off by heat and lost up the chimney unless proper furnace-firing methods are used by the home-owner or firemen.

The United States could support a *population* double its present size at a standard of living eight times as high as now, a prominent economist recently stated.

*Malaria-bearing mosquitoes* have a habit of resting on the walls of houses after getting a meal of blood, a habit that makes them easily killed by DDT if the walls have been sprayed with this insecticide.

*Fuchsias*, a familiar house plant of several decades ago and now becoming popular again, was often known as Lady's Eardrops because of the form of its flower; in its native South America it grows to a shrub or tree.

Florida sands containing *titanium* and *zirconium* are being drill-explored in 10 counties by the federal government in anticipation of expected wider uses of these metals, particularly titanium for use in construction.

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